CLAIMS

1. Thermal transfer printing machine (M) comprising

at least one rotating spindle (1, 2; 1', 2'), and

at least one ribbon spool (30) mounted on the said spindle (1, 2; 1', 2') and having an axial passage (31) in which a transversely projecting locating formation (33a) is defined, and at least one transversely re-entrant connecting formation (35, 36);

the spindle (1, 2; 1', 2') comprising

an axial portion (15) on which a ribbon spool (30) is designed to be mounted; the said axial portion (15) of the spindle having a stop shoulder (25) against which the locating formation (33a) of the ribbon spool (30) is designed to abut; and

at least one transversely projecting element (18a, 19a) able to engage in the connecting formation (35, 36) of the ribbon spool (30) in such a way that the spindle and the spool (30) rotate together;

the arrangement of the locating (33a) and connecting (35, 36) formations of the spool (30), and of the stop shoulder (25) and of the projecting element (18a, 19a) of the spindle being such that the ribbon spool (30) is connectable to the spindle simply by inserting the spindle through a predetermined end (31a) of the axial passage (31) of the ribbon spool (30).

2. Machine according to Claim 1, in which the spindle (1, 2; 1', 2') is provided with tightening means (26, 27) capable of causing a radial movement of the abovementioned transversely projecting element (18a, 19a) towards the corresponding connecting formation (35, 36) on the ribbon spool (30) mounted on the spindle; the said tightening means comprising

an actuating member (27) projecting beyond the ribbon spool (30) connected to the spindle.

3. Machine according to Claim 2, in which the spindle (1, 2; 1', 2') has a first and a second axial portions (15, 24) having a larger cross section and a smaller cross section, respectively, between which the abovementioned stop shoulder (25) is defined; at least one longitudinal slot (16, 17) being produced in the first axial portion (15) to take a radially movable key member (18, 19), one end (18a, 19a) of which extends along the said second axial portion (24) of the spindle and has a shaped profile, in particular an inclined plane (18b, 19b);

and in which the said second axial portion (24) of the spindle has a thread (26) on which a tapped part (27) is screwed, a first end (27a) of which projects out of the ribbon spool (30) connected to the spindle, and the second end (27b) of which is able to interact with the said shaped profile (18b, 19b) of the key member (18, 19) in such a way as to bring about a movement of this key member (18, 19) towards the corresponding connecting formation (35, 36) on the ribbon spool (30).

4. Machine according to Claim 3, in which the said first axial portion (15) of the spindle has at least one peripheral groove (20, 21) containing an elastic sealing ring (22, 23) capable of keeping the said key member or members (18, 19) in the corresponding slot or seat (16, 17).

5. Ribbon spool (30) for connection to a spindle (1, 2; 1', 2') of a thermal transfer printing machine (M), comprising

an essentially cylindrical tubular supporting element (32, 33), through which an internal axial passage (31) runs

to accommodate the spindle; a variation of cross section being produced in an axially intermediate portion of the said passage (31) to define a transverse locating formation (33a), against which a reference and stop shoulder (25) on the spindle is designed to abut;

at least one connecting formation (35, 36) being produced in an axial portion (31b) of the said passage (31) and able to connect prismatically with a portion (18a, 19a) of the spindle, in such a way that they rotate together;

the connecting formation (35, 36) and the locating formation (33a) being produced in such a way that the said supporting element (32, 33) is connectable to the spindle purely by inserting the spindle through a predetermined end (31a) of the said axial passage (31).

6. Ribbon spool according to Claim 5, characterized in that it is a monolithic element, that is it is made in one piece.

7. Ribbon spool according to Claim 5, in which the said supporting element (32, 33) comprises

a cylindrical tubular core (32), on the periphery of which a ribbon (N; R) is to be wound, and

an insert (33) of essentially cylindrical tubular shape, which is shorter than the core (32) and is fixed inside the said core (32) in such a way that one of its ends defines the abovementioned locating formation (33a);

the said connecting formation or formations (35, 36) being formed in the inside surface (31b) of the insert (33).

8. Ribbon spool according to Claim 7, in which the said cylindrical tubular core (32) is made of board or the like, and the insert (33) is of a comparatively more rigid material, in particular a plastic material, and is driven with interfer-

ence into the said core (32).

9. Ribbon spool according to Claim 8, in which the insert (33) has at least a plurality of peripheral projections (34), such as ribs or fluting, for digging into the core (32).

10. Ribbon spool according to any one of Claims 7 to 9, particularly for a printing machine (M) having at least two rotating spindles (1, 2; 1', 2') designed to take corresponding spools (30) of identical shape for corresponding ribbons (N, R) of equal width (L) and which in operation are unwound or wound in opposite directions; the said insert (33) being positioned axially in the core (32) in such a way that the end of the insert (33) which defines the abovementioned locating formation (33a) is at the central axial section of the core (32).

11. Ribbon spool according to Claim 10, in which the insert (33) has a length (I) equal to half the length (L) of the core (32).

12. Ribbon spool according to Claim 10 or 11, characterized in that it has a visible feature, such as colour, which it shares with the spindle to which it must be connected in operation; the said feature being different for the two spindles and for the corresponding ribbon spools (30).

13. Ribbon spool according to any one of Claims 5 to 13, in which the said connecting formation or formations is or are a slot (35, 36) formed in the inside surface of a smaller-diameter axial portion (31b) of the abovementioned passage (31).

14. Ribbon spool according to Claim 13, in which there are formed in the smaller-diameter axial portion (31b) of the abovementioned passage (31) two preferably diametrically opposite slots (35, 36) designed to be engaged by respective radial projections (18a, 19a) of the spindle.

15. Reel (3, 4) of ribbon prewound for use in a thermal transfer printing machine (M), characterized in that it comprises a ribbon spool (30) according to one or more of Claims 5 to 14.